

CHARLOTTE STREETCAR STARTER PROJECT

Urban Circulator Systems Grant

Applicant Information

The applicant is the City of Charlotte
The City's FTA recipient ID #1111

Contact information:

Name: John Mrzygod, PE
Title: Project Manager
Number: 704.336.2245
Fax: 704.336.6586
Email Address: jmrzygod@ci.charlotte.nc.us
Organization: City of Charlotte – Engineering & Property Management
Address: 600 E. Fourth Street, Charlotte, NC 28202

The City of Charlotte, located in Mecklenburg County, is the largest municipality in North Carolina. The city covers 299 square miles and is the heart of the Charlotte Metro region serving more than 1,725,000 people.

The City of Charlotte's Engineering & Property Management (E&PM) department will manage the design and construction of the Streetcar Starter Project. E&PM also manages the design and construction of City facilities and infrastructure projects. These include neighborhood improvements, storm water services and water quality, transit, roadway improvements and other projects such as the building of the NASCAR Hall of Fame and Charlotte Bobcats Arena. For the period FY2010-14, E&PM will handle more than 200 City capital improvement projects valued at \$533 million. E&PM staff also manages real property, enables sustainability, manages facilities and provides regulatory services. The breadth of projects and services provided by E&PM positively impact the quality of life for more than 716,800 Charlotte citizens, every day.

The City of Charlotte's Charlotte Area Transportation System (CATS) department will operate and maintain the streetcar once constructed. CATS is the regional transit provider for the Charlotte-Mecklenburg North Carolina regional and currently operates and maintains the bus and LYNX light rail systems.

In the event an Urban Circulator Systems Grant of \$24.99 million is awarded to the City of Charlotte, City Council is prepared to provide the necessary matching funds. On January 25, 2010, Charlotte City Council approved the Urban Circulator Grant application and endorsed a funding plan setting aside \$12.0 million in previously appropriated capital investment funds as the City's share of the \$36.99 million Streetcar Starter Project. The \$12.0 million City contribution would be comprised of existing capital appropriations from various sources, including City debt capacity of \$5.5 million and \$6.5 million funded from the City's Pay-As-You-Go capital fund. The Pay-As-You-Go fund is supported by a portion of the City's property tax, sales tax, and auto tax revenues.

For FY 2009, the City maintained its AAA bond rating from all three major rating agencies.

The City's Comprehensive Annual Financial Report for the year ending June 30, 2009 can be viewed using the link on Page 25.

Project Information

The City of Charlotte's application for Urban Circulator funds consists of the construction of the first mile and half of a proposed 10-mile streetcar project in the City's urban core known as Center City. The main terminus for the project is the Charlotte Transportation Center (CTC), which is the facility that houses the Charlotte Area Transit Systems (CATS) primary transfer location between its bus system and its existing LYNX light rail service. The streetcar alignment will extend along Trade Street and Elizabeth Avenue to Hawthorne Street utilizing the half mile of existing track that was recently installed as part of a streetscape project along Elizabeth Avenue. The other terminus of the project will be on Hawthorne Avenue adjacent to Presbyterian Hospital, one of two major hospitals serving the Charlotte area. The Streetcar segment from CTC to Hawthorne Lane will connect downtown Charlotte, which includes the Time-Warner Cable Arena, and the University of North Carolina at Charlotte uptown campus, to the campus of Central Piedmont Community College (CPCC), Presbyterian Hospital, Presbyterian School of Nursing and the shops and restaurants along Elizabeth Avenue.



In 2006, the City of Charlotte completed a feasibility analysis, 10 percent design and concept plans for the full streetcar alignment. Currently, the 10 mile project is being advanced to a 30 percent design level. In the event the City is awarded the grant, we are prepared to advance the Streetcar Starter Project through final design and into construction.

The Urban Circulator Systems Grant affords the City the opportunity to implement the 1.5 mile segment and take advantage of two recent transit investments:

1. As part of a recently completed streetscape construction project on Elizabeth Avenue, the City embedded rails on .4 miles of the segment to be funded under this program. The streetscape project also included the installation of catenary poles for this portion of the proposed streetcar alignment. This was achieved through a joint public / private venture between four city departments, Central Piedmont Community College, and Grubb Properties, a local developer.
2. CATS has three replica trolleys that can be used for service on the proposed starter alignment.

Charlotte's Streetcar Plan – Proposed Streetcar Starter Alignment



KEY STATISTICS ABOUT THE CHARLOTTE STREETCAR STARTER ALIGNMENT

Alignment and length:	The project entails the construction of 1.42 miles of double-tracked in-street rail on segments of Trade Street, Elizabeth Avenue and Hawthorne Lane and a small section of non-revenue track on Caldwell Street and 5 th Street.
Number of vehicles:	The City of Charlotte proposes to use 3 Gomaco Vintage Trolleys that have already been acquired with a peak requirement of 2 vehicles and 1 spare.
Number of stops:	There are 6 stop locations along this alignment: three median platform stops and three curbside stops.
Frequency of service:	Proposed peak hour service is two vehicles with 10-15 minute headways with 20 minute headways during off peak service.
Hours of operation:	6 AM to 11 PM Monday through Thursday, 6 AM to 12 AM on Friday, 8 AM to 12 AM on Saturday and 9 AM to 7 PM on Sunday
Location of maintenance facility:	The vehicles will be maintained at the existing CATS light rail maintenance facility on South Boulevard.
Intermodal connections and transfer centers:	The streetcar will connect to the Charlotte Transportation Center as well as the northern terminus of the LYNX light rail line. Both connections occur at the western terminus of the streetcar on Trade Street in the central business district of Charlotte.

Charlotte Residents Strongly Support Transit

Charlotte and Mecklenburg County voters approved and later reaffirmed their support (70%) for a ½ cent sales tax to support comprehensive transit development including over 60 miles of rail transit. The City opened its first section of rail based transit in November 2007 with the LYNX Blue Line, a 9.6 mile, 15-station light rail system that is already approaching 2020 ridership projections.

Letters of Support for this grant and project can be found via link on Page 25 of this application.

Improves Transit Service in the Highest Demand Corridors

The overall streetcar corridor has the highest combined bus boardings of any corridor in the Charlotte transit system. Routes 1, 7, 9, 39 and Gold Rush Red Line all have their highest volumes on Beatties Ford, Trade Street, Elizabeth Avenue or Central Avenue. Although the starter project is a small segment of the overall streetcar plan, this service will help enhance CATS existing system.

Peak volumes for Route 9 occur in the midday and PM peak hours and usually occur near Central Piedmont Community College at Kings Drive and Elizabeth Avenue. The proposed starter project will improve service on this high volume segment between CPCC and the Charlotte Transportation Center.

Enhances Mobility

The project is needed to enhance mobility in the project corridor. As the focal point of employment and transportation within the region, Charlotte's Center City must have a modern transit system to support its growing mobility needs. The streetcar is part of a system plan with five major transportation corridors emanating out from Center City. The major transportation corridors are the focus of future development and redevelopment. According to the *2030 Transit System Corridor Plan*, "The Center City improvements are designed not only to serve travel within the CBD (Central Business District), but also to provide and enhance transit connectivity between the corridors.

These improvements will benefit the entire region by enabling the individual corridors and local services to function as an integrated system." The streetcar establishes an east-west transit spine that links all five rapid transit corridors in downtown Charlotte.

Enhanced mobility provided through the efficiency and convenience of the streetcar and accessibility to key destinations will also enhance the walkability of Center City. According to the *2030 Transit System Corridor Plan*, "Operation of the streetcar along Trade Street would further enhance this street as a pedestrian/transit way. The streetcar



Charlotte Transportation Center at Trade Street

project would provide a new and unique mode of transportation, facilitating travel and improving transit access for residents and businesses along the corridor.

The starter project will also enhance mobility in neighborhoods of diverse income and ethnic composition. Demographic analyses of the initial segment of the streetcar indicates that several existing single-family and multi-family neighborhoods are comprised of low-income and minority households. The starter project will enhance the quality of transit service to these neighborhoods thereby improving mobility among transit dependent populations, linking them to employment, education, medical services, and other modes of transportation. A demographic analysis shows that the one half-mile streetcar rider capture area would provide access to high-quality transit service for an additional 2,849 low income and 4,410 minority persons along the 1.5 mile alignment.

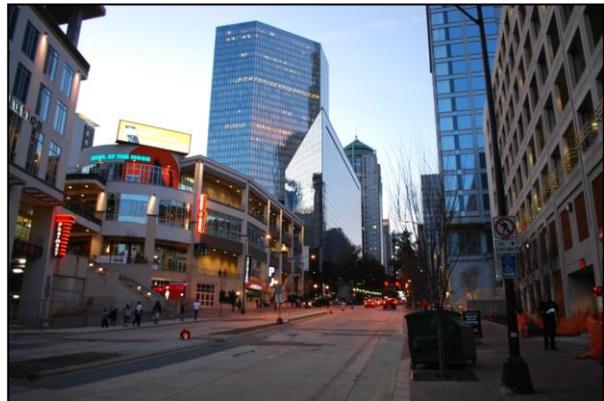
Serves Projected Population and Employment Growth

The streetcar is one component of an overall transit system that is needed to keep pace with projected population and employment growth. As one of the fastest growing cities in the United States, the population and employment rates within Charlotte are projected to continue the rapid growth trend. In addition, increased interest in living in an urban setting and the desire to live close to work has created a growing demand for residential development in the project corridor. Numerous development activities are planned or are under construction within the project vicinity. The proposed streetcar would provide existing and future residents with an efficient and attractive transit option for traveling to and from work and between other destinations served by CATS' transit system.

Much of the projected growth in population and employment will be experienced in the streetcar corridor. The number of urban core residents within one-half mile of the streetcar alignment will increase by over 16,000 persons between now and 2030. This constitutes a 160% increase in population. Employment numbers are growing as well. The initial segment of the streetcar will be serving 119,000 employees by 2030, an increase of 44%.

Improves Connectivity Between Activity Centers

The streetcar provides high-quality transit service connecting key destinations along the proposed segment. Major activity centers within the corridor include the Charlotte-Mecklenburg Government Center, the Charlotte Transportation Center, Time Warner Cable Arena (home of NBA Charlotte Bobcats), EpiCentre, Central Piedmont Community College - Central Campus, and Presbyterian Hospital. Shopping, medical offices and services, and key offices for federal, state, and regional agencies and community services are also located along the proposed alignment.



EpiCentre and view of downtown along Trade Street

The streetcar would directly serve Central Piedmont Community College – Central Campus, which enrolls between 16,000 and 17,000 students, all of which live off campus and commute to the college. The Central Campus hosts special events such as art exhibits, theatrical performances and conferences. Two other educational institutions, the University of North Carolina at Charlotte Uptown Campus and Kings College are also within walking distance of the alignment.



Elizabeth Avenue

Presbyterian Hospital's main campus and school of nursing is located at the eastern terminus of the proposed streetcar segment and is the region's second largest medical complex. The hospital employs over 10,000 people.

Serves Existing and Planned Development

The City of Charlotte is growing in population and is proactively working to implement transit improvements that will support livable urban communities by promoting economic development, increased development density, and mixed income residential development. The streetcar will provide mobility enhancement to diverse residential areas and housing types. The project would serve existing single-family and multi-family neighborhoods throughout the corridor as well as promote pedestrian and transit-oriented residential infill development characterized as multi-family, mixed-use development with new urbanism design elements. Such elements include streetscape features that serve pedestrians by providing them with distinctive and human-scale spaces. There are four development and expansion projects under construction within the project study area. These and other developments planned for the corridor support the streetcar project by increasing pedestrian-oriented activity throughout the corridor, which will promote transit and result in increased use of the system. Likewise, the streetcar would support the development activities by enhancing mobility and providing high-quality transit service to developing and redeveloping areas of Charlotte.

Encourage and/or Accelerate New Development

Trade Street and Elizabeth Avenue will generate substantial development interest and potential over the next few years. Current redevelopment trends demonstrate high-density projects with a mix of commercial and residential uses, particularly on parcels fronting the corridors. These development opportunities become more attractive and could potentially be accelerated by the implementation of the streetcar starter project.

Preliminary Management Plan

The Project Management Plan (PMP) was developed to assist with the management of all elements of the Charlotte Streetcar Project (CSP). The PMP will assure consistency, facilitate quality control, and provide for receipt of federal capital assistance grants. This PMP was prepared to fulfill the requirements of the FTA (Title 49 of the United States Code, Section 5327 Project Management Oversight). It defines the scope of project implementation through completion of the Environmental Assessment and Preliminary

Engineering and sets the stage for further development for subsequent final design, right-of-way acquisition, and construction.

This PMP provides an overview of the management requirements and programs that are needed to satisfactorily implement an efficient and cost-effective transit system. This PMP will coordinate the schedule for implementation with budget considerations and develop plans for dealing with various challenges, including environmental, social, and other impacts.

The following list represents the major chapters included in the CSP PMP:

- Purpose And Description
- Project Organization And Management
- Project Administration And Control
- Quality Assurance Management And Control
- Procurement
- Project Communications
- Real Estate Plan
- Human Resources And Labor Relations
- Legal Requirements And Agreements
- Preliminary Engineering / Environmental Impact Statement (PE/EIS)
- Final Design (FD)
- Construction Management
- Testing
- Safety And Security Management
- Risk Management
- Start Up And Testing

The Center City Streetcar PMP developed for the planning and conceptual design phase is included via link along with other supporting documents.

Project Evaluation Criteria

The following section demonstrates how the Charlotte Streetcar Starter Project satisfies the project evaluation criteria included in the Notice of Availability of FTA Urban Circulator Funds Solicitation of Project Proposals.

Livability

In 2009, the EPA, HUD and the USDOT joined together to promote a set of guiding livability principles that they hoped would “help improve access to affordable housing, [provide] more transportation options, and lower transportation costs while protecting the environment in communities nationwide.” The City of Charlotte has worked diligently to combat the same trend toward sprawl and community disconnection that has affected this community as it has many others nationwide, using our own collaborative policies and programs to improve livability, strategic growth, and sustainability. Support for this project at the Federal level provides strong and clear evidence that the livability principles adopted by the three Federal agencies are being advanced, and that the national and local priorities are mutually-supportive and actuating.

In this section, local elements of livability are discussed:

- Implementing a Pedestrian Wayfinding System throughout the Center City, including at light rail platforms to support and encourage pedestrian mobility and “park once” flexibility;
- Implementing the *Uptown (Center City) Streetscape Standards* with signature street designation for all primary pedestrian streets, including Trade Street. New developments along the 1.5-mile route that reflect the Uptown Streetscape Standards include the Sierra Hotel (under construction) and the new United States Courthouse (in design);
- Implementing a Vehicular Wayfinding System to efficiently direct motorists to the parking supply available on a real-time basis;
- Balancing the parking supply with transit service through development proposals/negotiations; and
- Creating a Collaborative Parking Management System to optimize the use of the available parking supply, balancing parking supply against needs to avoid creating excess supply.

2. Improve Existing Transportation Choices

The City of Charlotte is committed to becoming “the premier city in the country for integrating land use and transportation choices.” The City’s *Transportation Action Plan (TAP)* provides a policy and implementation “blueprint” for a livable, multi-modal transportation system responsive to the City’s *Centers, Corridors and Wedges Growth Framework*. The *TAP*, adopted in 2006 by the City Council, is Charlotte’s comprehensive transportation plan describing the policies, programs, and projects for the City, whose population will likely grow to 1 million people by 2030. An explicit goal of the *TAP* is to “prioritize, design, construct, and maintain convenient and efficient transportation facilities to improve safety, neighborhood livability, promote transportation choices and meet land use objectives.”

Charlotte’s *Urban Street Design Guidelines (USDG)* provides the tools to achieve the *TAP*’s goals for streets. The *USDG* describe how to design streets (of varying types or classifications), street networks, and cross-sections to create not only better streets, but more livable places. For instance, the *USDG* enable better ‘matches’ between street designs and the surrounding (existing and planned) land uses, thereby “right-sizing” the street network and creating the most “complete” streets to improve the mobility, safety, and comfort of pedestrians, cyclists, transit riders, and motorists. Applying the *USDG* will, over time, offer greater variety of travel options to Charlotteans as the City continues to grow and intensify.

As they relate to this project, the *2030 Transit System Corridor Plan*, the *Center City Transportation Plan*, the *TAP* and the *USDG* provide connectivity between the streetcar and other travel modes, along with new approaches to street design (along with the streetcar) that will expand transportation choices along the project’s alignment. For example, Elizabeth Avenue has been reconstructed to include bike lanes and wider sidewalks along the alignment, thereby offering additional mode choices to travelers in the immediate area and beyond. The streetcar will complement these and provide an additional travel choice to those living and working along and near the alignment. Other recent improvements near the 1.5-mile starter alignment include a “road-diet” conversion of Hawthorne Lane from four travel lanes to two travel lanes with bicycle lanes and parking, which provides a better streetscape and more travel mode choices in the area.

3. Improve Accessibility

In transportation, accessibility refers to the ease of reaching destinations. People who are in places that are highly accessible can reach many other activities or destinations quickly; people in inaccessible places can reach fewer places in the same amount of time. As noted previously, the streetcar will provide a high-quality transit service connecting key destinations in the central business district of Charlotte. It enhances the transit accessibility of the area in three distinct ways.

1. The proposed frequency of service will result in a new mode of transportation that is faster than walking or driving (assuming you park at both ends of the trip) along the alignment. The concept of walking out your office building, hopping on the next streetcar and riding to the Government Center or a restaurant for lunch effectively expands the “walkability” of the area as a whole and improves the accessibility to more shops, restaurants and other key destinations. This will reduce automobile trips in the midday as well as parking demand.
2. The fact that the western streetcar terminus is the Charlotte Transportation Center increases the possibility that more trips will be completed using transit. Now that the hospital and other key destinations will be served by streetcar more people will use the CATS system to travel to the CTC and use the streetcar. The viability of major investments is improved because of greater accessibility.
3. The streetcar enhances accessibility related to the Americans with Disabilities Act (ADA). A long term goal for the streetcar facility will be to implement low floor modern streetcars. Level boarding will allow easy access and faster travel times (shorter boarding time) for all including those utilizing mobility devices like wheelchairs.



CPCC on Elizabeth Avenue

4. Coordinated Transportation and Land-Use Planning with Public Involvement (and) Connection between Redeveloping or New Neighborhoods On Vacant or Underutilized Land Adjacent to Alignment

The desire to live closer to work, and a burgeoning interest in urban living, has created an increase in residential and mixed-use development in the Center City and surrounding neighborhoods. The project will better connect these neighborhoods, and support the higher residential densities encouraged by transit-supported development which is part of the City's growth strategy and articulated in the *Centers, Corridors and Wedges Growth Framework*, the *General Development Policies*, and other land use regulations and plans. The following section outlines a number of those planning documents, and how transportation is linked to land use, infrastructure provision and regulation so that a seamless community fabric is maintained.

A "Centers and Corridors" development framework was originally introduced in 1994 and has become the City's overarching policy for organizing and guiding growth and

development within the City of Charlotte. The concept of the City's Centers and Corridors strategy is to guide new development and redevelopment into areas that can appropriately and adequately support it (mainly the City's main "activity centers" and the five main linear "growth corridors" radiating from the Center City), and away from the City's mainly low-density, single-family residential "wedges," where unreasonable growth pressure often adds unwelcome and inappropriate burden on the existing infrastructure and neighborhoods. The framework is currently being updated and is expected to be adopted by the Charlotte City Council in the summer of 2010. The updated framework – now referred to as the *Centers, Corridors and Wedges Growth Framework*—broadens the original focus on linking transportation and land use to include other aspects of planning and development, such as the need for adequate public facilities and an emphasis on environmental concerns and sustainability. The *Centers, Corridors and Wedges Growth Framework* will be used as the basis for development of more detailed policies, plans and regulations; to give broad guidance for infrastructure investment; and as a tool to evaluate Charlotte's success in addressing growth issues.

General Development Policies

The *General Development Policies (GDP)* document provides guidance for the location, intensity and form of future development and redevelopment throughout Charlotte. They are broad policies that are used to provide direction in developing future land use plans as well as in making rezoning decisions. The *GDP* provide guidance in updating zoning and subdivision ordinances, and for integrating the planning of land use with capital facilities, particularly transportation planning.

The original *GDP* were adopted in 1990 and addressed a wide array of issues related to growth and development. The City's Planning Key Business Unit (Department) is now in the process of updating and enhancing the original policies. Phase I of the update was completed in 2003 and includes policies in four key areas relevant to consideration for streetcar development:

- Transit Station Area Development
- Residential Location and Design
- Retail-Oriented Mixed/Multi-Use Centers
- Plan Amendment Process

Phase II of the *GDP* includes chapters on the environment and infrastructure. Both were adopted by the City Council in 2007, and are key in the City's efforts to minimize negative environmental impacts of land use and land development (via policies in the former); and to more closely link land use and land development decisions with the public infrastructure needed to support it (via the latter).

Guiding principles in the Environment chapter that are relevant to streetcar include:

- Making the protection of our natural environment a priority in land use and development decisions.
- Facilitating a land use pattern that accommodates growth while respecting the natural environment, by:
 - Pursuing strategies to encourage and facilitate redevelopment of abandoned/underutilized sites and development of vacant sites in built-up areas (infill);

- Facilitating the incremental development of well-designed and well-connected mixed/multi-use development in appropriate locations; and
- Encouraging more of the City's new development to be located where transportation facilities already exist or are planned.

Likewise, relevant guiding principles from the Infrastructure *GDP* are:

- Coordinating growth with the provision of infrastructure, by:
 - Facilitating growth consistent with the *Centers, Corridors and Wedges Growth Framework*;
 - Encouraging infill and redevelopment as one strategy to take advantage of existing infrastructure; and
 - Ensuring that decisions regarding location and intensity of development take into account geographic areas in which infrastructure is and will be available.
- Ensuring that infrastructure provision seeks to minimize negative impacts to both the natural and social environment by:
 - Considering impacts to existing neighborhoods when providing infrastructure; and
 - Considering sustainability when making infrastructure decisions.

Pedestrian Overlay Zoning Districts

Many of Charlotte's older urban neighborhoods—including those along the proposed streetcar project's alignment—were laid out with "spines," main streets that were primarily residential when originally developed but had commercial buildings in numerous locations along them with businesses that served the surrounding neighborhoods. With the automobile, however, came the advent of single-use zoning, cementing a commercial-only character of buildings on these formerly-mixed use streets. The corridors became "stripped out" with auto-oriented uses, which neither served the existing neighborhoods nor allowed for convenient, safe or welcome pedestrian activity.



The purpose of the *Pedestrian Overlay District (PED)* is to bolster, or re-establish where necessary, a walkable urban fabric in these neighborhoods and along these "spines," by promoting a mixture of uses in a pedestrian-oriented setting of moderate intensity. The zoning district encourages the reuse of existing buildings that contribute to the unique character or history of the area; and has standards that mandate high quality design, mixed use development, the use of public transit, and new development complementary with adjacent and/or surrounding neighborhoods.

While the initial 1.5-mile segment does not include *PED* districts, the proposed 10-mile streetcar alignment will run through three *PED* zoning districts: the West End (2005); Sunnyside (2004); and Plaza-Central (2003) districts.

An important facet of *PED* zoning is its focus on the redevelopment of vacant or underutilized parcels. *PED* zoning accomplishes this by “relaxing” the limited ‘suburban-style’ zoning requirements that create hardships for urban infill redevelopment, so that compatible infill redevelopment can occur, both stabilizing the corridor and strengthening adjoining neighborhoods over time. The *PED* category recommends more flexible minimum parking standards, buffers, screening and setbacks, and permits mixed use development by right.

5. *Mixed-Income Housing, Low-Income Housing Within Walking Distance*

The City has established a Neighborhood Policy that focuses on creating and supporting neighborhoods that are planned; housing which is safe, decent and affordable; transportation that is accessible; infrastructure that is adequate; an environment that is healthy and nuisance-free; an economy where there is opportunity; and with neighborhood organizations that are well-managed. The City addresses the needs of all neighborhoods, but focuses on developing unique approaches and solutions to assist each of the City’s Challenged and Transitioning neighborhoods. For example:

Safe, Decent And Affordable Housing

The quality and availability of housing defines a successful neighborhood. The City has established minimum housing codes to ensure that every house is safe and decent. Also, as is the case in many cities nationwide, housing affordability is a challenge for many residents in Charlotte. The City has established policies aimed at preserving, developing and providing support services for affordable housing. Key polices include:

- Maintaining safe and decent housing through enforcement of the minimum housing code;
- Providing funding for affordable housing through establishment of a Housing Trust Fund;
- Encouraging mixed-income housing through the utilization of city funds;
- Dispersing affordable housing throughout the community using the Housing Locational Policy;
- Providing both affordable rental and ownership housing at and near transit station areas;
- Working jointly with Mecklenburg County to preserve and expand opportunities for affordable housing;
- Promoting home ownership in declining neighborhoods; and
- Supporting an information clearinghouse to provide information on affordable housing availability, and on assistance in making housing choices.

Accessible Transportation

Mobility choices are important when traveling both within a neighborhood and around Charlotte. Neighborhood policies linked to transportation issues fit the needs of neighborhoods into the larger, city-wide framework. Highlights of key transportation policies related to neighborhoods include that:



- The City will provide a multi-modal transportation system (roads, transit, pedestrian, etc.);
- A minimum of 65% of the City's population will have access to transit;
- The City will require bike lanes on all new and reconstructed roadways, where feasible;
- The City will provide sidewalks, crosswalks, pedestrian signals and lighting;
- The City will preserve the existing and provide for a future connected street system; and City will implement neighborhood traffic calming measures, when requested.

Economic Development

Convenient access to goods, services and employment is one key to maintaining a neighborhood's vitality. However, some families living in neighborhoods adjacent to the proposed streetcar alignment do not presently have easy access to goods and services to maintain their households; particularly if they are transit-dependent. Some neighborhoods near the alignment also have high relative unemployment, further diminishing opportunity for self-sufficiency. Some key City policies to address this area are to: promote infill and redevelopment in distressed business corridors and neighborhoods; and promote workforce development opportunities. The implementation of activities related to these policies, coupled with the provision of adequate transit infrastructure such as the streetcar, will assist residents to more easily travel to employment outside the neighborhood, and will provide much-broader access to shopping and other activities required for household maintenance.

Sustainability

As more people take public transit and leave their cars at home, we reduce regional vehicle miles of travel and reduce transportation's overall impact on the environment. Along with City and County policies, the proposed Charlotte Streetcar Project is yet one more tactic the City of Charlotte has and will implement as part of its comprehensive on-going sustainability practices.

City/County Policies

Over the years, the City has established a number of policies and programs which directly impact the environment, including those related to: land use and zoning; transportation systems; water supply, treatment and quality; wastewater treatment; waste collection and recycling; storm water quality and quantity; tree canopy; and the City's building and fleet operations.

A more formal commitment to sustainability began in 2003, when the City Manager incorporated environmental concerns into corporate strategy by placing the objective to "Safeguard the Environment" on the City's Balanced Scorecard (an operating plan the City uses to align priorities and measure performance). Council and staff efforts focused on air quality, in coordination with Mecklenburg County, and on regional land use and planning and clean fuels, in coordination with the Centralina Council of Governments.

In 2006, City Council appointed a new Council Committee on Environment and promoted "Environment" to the status of Council Focus Area, along with Council's other four key areas of policy interest (Transportation, Public Safety, Housing & Neighborhood Development, and Economic Development). In 2007, Council approved the first *Environment Focus Area Plan*, laying out the City's strategy and goals with regard to

environmental initiatives. The latest versions of the *Environmental Focus Area Plan* carry the tagline: “Charlotte will become a national leader in environmental initiatives to preserve our natural resources while balancing growth with sound fiscal policy.”

In addition to these specific environmental initiatives, sustainability as a broader community issue is a key theme of staff-level growth management discussions, culminating in a draft strategy called “Centers, Corridors, and Wedges”.

Key achievements in the area of sustainability include:

- Completion of the Greenhouse Gas Inventory for City operations and later for the community,
- Council adoption of General Development Policies for Infrastructure and Environment, a Post-Construction Controls Ordinance, and a Policy for Sustainable City Facilities.
- Achievement of LEED Gold Certification for the Charlotte-Mecklenburg Utilities Laboratory facility and Energy Star status for the Charlotte-Mecklenburg Government Center
- Creation and successful operation of a local Stream Restoration Mitigation Bank
- Implementation of soft green building practices at CATS park and ride facilities, such as pre-treatment of storm water runoff, in “rain gardens” and grass-lined swales, beyond what is required by the code

Environmental issues have long been a concern of Mecklenburg County as well - particularly in relation to traditional County services such as air quality, water quality, solid waste and recreation.

The first bi-annual *State of the Environment Report* was produced by Mecklenburg County in 1987. These reports describe environmental conditions in the County, provide measures to evaluate progress, and make recommendations for action by elected officials. Many recommendations have translated into actions such as adoption of SWIM regulations, investments in parks and greenway systems, and expansion of mass transit.

The Mecklenburg County Board of Commissioners adopted an *Environmental Leadership Policy* in 2004 to guide the recurring activities of County government, stating “County government will operate in a manner that conserves and protects our air, water and land resources, become a model of environmental stewardship for local governments, business and industry in our region, and use and apply the County's existing and future resources wisely for the benefit of its citizens.” This has been adopted as the mission statement of the staff-level Environmental Leadership Team (ELT). The ELT concentrates and reports on four areas: Emission Reduction, Resource Conservation, Commitment, and Stewardship Enhancement.

Key achievements include:

- Completion of a Greenhouse Gas Inventory and Action Plan.
- Achievement of LEED Gold Certification for the Medical Examiner facility and Energy Star status for 25 school campuses.

Energy Efficiency

Planning level patronage forecasts (NCHRP 365 Methodology) indicate that the streetcar will carry 1,000 to 1,500 riders per day. It is very difficult to determine how many of these trips would have been completed using an automobile. However, the

spreadsheet model does show an additional 500 riders using the current LYNX Blue Line and transferring to/from the streetcar to complete their trip. Surveys on the LRT show that 50% of the riders have access to an automobile. Assuming 250 new daily riders on rail transit as a result of the implementation of the starter project, it can be estimated that the facility will conservatively save over 35,580 gallons of fuel annually. This number is expected to grow considerably as the City expands on the initial segment to be funded under this program.

Daily New Riders	Avg. Trip Length (¾ LRT+SC)	Daily VMT Reduction	Fuel Savings/Day (Avg. Fuel Consumption 18 mpg)	Annual Fuel Savings (FTA Annualization 305 days)
250	8.4 miles	2100 miles	117 gallons	35,583 gallons

On January 28th and 29th of 2010, the City held a Streetcar Technology Showcase that included several car builders from the US, Asia and Europe to provide a “state of the industry” in regards to technology advancements in propulsion. Advancements in propulsion include the use of hydrogen, compressed natural gas, batteries and super capacitors. Many of the car builders stated that some of these new technologies could reduce energy consumption by as much as 30 percent. Research into providing an energy efficient streetcar system will continue as the project progresses.

Maintains, Protects or Enhances the Environment

One of the main benefits of the introduction of streetcar to the Trade Street corridor is that it will provide high levels of transit service while reducing emissions in the corridor. According to the Environmental Assessment completed for the conceptual phase of the overall alignment, the 10-mile streetcar facility will reduce daily vehicle miles traveled by 119,603 miles in 2030 with subsequent net reductions of 873 kg/day of Carbon Monoxide (CO) and 83 kg per day of Nitrogen Oxides (NOX).

While the Streetcar Starter Project does not achieve the full scale benefits of the 10-mile CSP, implementation of this segment does move the City one step closer.

Economic Development

The economic development potential of the proposed streetcar (the proposed 1.5 mile starter project and the entire 10-mile proposed system) is substantive and varied. The following sections detail development and redevelopment which has already occurred in anticipation of the streetcar as well as the transit supportive policies that will foster a migration to a more balanced and mixed-development landscape along the streetcar alignment. It is anticipated that the starter project will accelerate and positively impact future development by enabling higher density and greater mixture of uses as shown through a comprehensive economic development study.

Redevelopment Adjacent to Project

In August 2008, the City of Charlotte contracted Bay Area Economics (BAE) to develop forecasts of development responsive to the construction of the streetcar system proposed in the City’s 2030 Transit System Corridor Plan and potential tax revenue collections from those developments. BAE segmented the 10 miles of the proposed alignment into development submarkets and projected the growth for each submarket. Compared to growth projections for the alignment without the streetcar, the full alignment has the potential to increase residential development by more than 75% and

retail and office by up to 50%, The additional development would equal more than \$4 million a year in additional taxes on average between 2010 and 2035.

The *Charlotte Streetcar Economic Development Study* by BAE noted that the central business district submarket within the I-277 loop of Charlotte is largely built out already and identified six opportunity sites within the loop that would be likely responsive to the alignment. Five of the six sites identified by BAE lie directly adjacent to the proposed streetcar segment. These sites are projected to see the development of 4,000 residential units and more than 200,000 square feet of new retail. The impact of the streetcar will be through the acceleration of development and inducing higher densities than would be achieved without the streetcar. The report projects the streetcar will induce an additional 2,000 residential units and 175,000 square feet of retail on the five opportunity sites to total 6,000 residential units and 375,000 square feet of retail. The direct result of the alignment would be an increase of 50% more development on parcels adjacent to the alignment.

Elizabeth Avenue

The City of Charlotte has partnered with a consortium of developers to finance and construct the Elizabeth Avenue project. Elizabeth Avenue is a six block thoroughfare that lies just outside of the central business district and is anchored on the west end by Central Piedmont Community College – Central Campus and on the east end by the Presbyterian Hospital complex. Elizabeth Avenue provides direct access from the Central business district to the hospital and the college. The land use in between these two anchors is currently characterized by low rise, low density office and retail uses. Construction has already begun on a comprehensive \$220 million urban infill / mixed use redevelopment project. The development will consist of redeveloping surface parking lots and single story buildings into 810 new residential units, 340,000 square feet of office space, 250,000 square feet of retail and 3,000 structured parking spaces to serve Presbyterian Hospital, the development project and Central Piedmont Community College. The City and Mecklenburg County are contributing \$13 million in tax increment financing to enable the structured parking construction.



Elizabeth Avenue

The City has also contributed \$8.2 million for the reconstruction and reconfiguration of Elizabeth Avenue. The street was completely removed and all underground utilities were replaced and upgraded. The street was reconfigured from a wide four lane street with no pedestrian amenities to be a two lane street with bike lanes, on street parking, planting strips, landscaped elements, wide sidewalks and decorative pedestrian lighting and street furniture. The construction is complete and represents a commitment by the City to promote urban infill and “place making”.

Elizabeth Avenue from the outset has been conceived by the developer to be accommodating and responsive to a streetcar alignment. Although the City's *2030 Transit System Corridor Plan* does not contemplate streetcar on Elizabeth Avenue prior

to 2018, the developers felt it crucial to design block faces and elevations that leverage the eventual benefits of a streetcar. The City of Charlotte also views Elizabeth Avenue as a crucial streetcar corridor. Using local transit tax funds, the City paid for and installed streetcar trackbed, track, conduit, pads, catenary poles and all other necessary subsurface infrastructure to allow the installation of a catenary. The six blocks of Elizabeth Avenue are completely prepared for the construction and operation of a streetcar with minimal disruption to surrounding uses. All that is needed is the erection and electrification of the above surface catenary elements.

First Ward Redevelopment Project

The City of Charlotte, Mecklenburg County and Levine Properties have partnered for a comprehensive redevelopment of six city blocks of urban in the First Ward neighborhood of Uptown. This mixed use project will bring more than \$800 million in investment to the neighborhood and will consist of residential, office and retail space anchored by a new five acre park and a satellite campus complex for University of North Carolina at Charlotte. The southern end of this project will feature midrise housing with first floor retail and the new park space will be within two blocks of the Streetcar Starter Project. The area is currently characterized by large surface parking lots and vacant single story office and manufacturing buildings.

The City and County are contributing \$30 million in tax increment support for infrastructure improvements to free up land for the park and the first phases of development. Construction is scheduled to begin in summer 2010. Foundations and the first four floors of structural steel for the first 300,000 square foot building for UNC at Charlotte are already in place with opening scheduled in time for the Fall 2011 semester. Future build-out of the development will include new office towers with first floor retail, hotels and a new "high street" that will be a center for festivals and fairs.



First Ward

Stand Alone Developments

The starter project will be directly adjacent to two new developments currently under construction.

- Sierra Hotel is one of the first properties in a new concept in hotel brands. With 180 rooms, Sierra Hotel will combine the forward design orientation of boutique hotel brands such as W and Aloft with the convenience features of an extended stay suite property. Construction has already started on the 16 story, \$35 million project which is expected to open in the 4th quarter of 2010. The hotel is sited on a 0.3 acre site adjacent to the Time Warner Cable Arena which was sold to the developer by the City of Charlotte. The hotel will face out directly on to the urban circulator alignment.
- Center City Green is a mixed use development providing new amenities for Center City Charlotte which is wrapped around a structured parking deck for a

new 30 story office tower. The deck has been completed and the first phase of the mixed use development is now under construction. The first phase includes the City's first year-round enclosed farmer's market, restaurants and retail. A second phase of 150 apartments affordable to the entry level workforce and constructed to LEED Platinum standards will begin in mid 2011.

Anchor Transit Trip Generators

The eastern end of the Streetcar Starter Project is anchored by Presbyterian Hospital, one of the largest hospitals in North Carolina with more than 600 beds and 200,000 square feet of new space under construction. The central campus of Central Piedmont Community College anchors the eastern end as well, with new campus buildings recently completed and several more under construction. CPCC has an enrollment of over 16,000 students with the majority of them attending classes in the 26 buildings on the main campus, most which are arrayed along the Elizabeth Avenue spine.

The middle portion of the alignment travels through the heart of the City and County office complexes including the police headquarters, the combined Charlotte Mecklenburg Government Center office building, Mecklenburg County Courts, the Charlotte Branch of the Federal Reserve Bank and the future federal district courthouse.

The western terminus of the project is anchored by Time Warner Cable Arena, a full service 19,000 seat arena that is home to the NBA Charlotte Bobcats; Imaginon, a children's library and learning activity center; and EpiCentre, a mixed use facility housing movie theaters, restaurants, proposed residential and other retail and entertainment fixtures.

Transit Supportive Policies

The City of Charlotte has aggressively supported transit oriented development across a spectrum of departments and initiatives. From an economic development perspective, the City has committed nearly one half of its tax increment finance capacity to two projects anchored by the streetcar segment: Elizabeth Avenue and First Ward. In addition to the tax increment dedications the City has committed \$17.23 million dollars in capital funds for infrastructure improvements to Elizabeth Avenue and First Ward to ensure their success.



Time Warner Cable Arena

Demonstrated Progress Towards Mixed-Use Redevelopment Served by Project

The previously mentioned developments at Elizabeth Avenue and First Ward are well underway as the City makes excellent progress towards the completion of these two projects.

Elizabeth Avenue – The City entered into an agreement with the developers of this project in 2007. The comprehensive streetscape and infrastructure rehabilitation project has been completed and opened in August 2009. The developers have submitted for building permit approvals on their first two phases and are entering final review phases. Preliminary site grading for the structured parking element has begun and three new buildings built by Central Piedmont Community College fronting Elizabeth Avenue have been completed and are now open and functioning.

First Ward – The City and County have approved all agreements necessary for the first phase of the project to move forward. UNC Charlotte has completed the foundation work and is erecting steel for their 9 story 250,000 square foot building. Levine Properties is currently working to finalize site design for the new park and the first structured parking facility. The City is collaborating with Levine Properties on the final designs of the infrastructure improvements it has obligated itself to complete. Weekly coordination meetings are advancing the necessary construction documents to meet a May 2010 construction commencement target.

Leveraging of Public and Private Investments

Critical to the success of the streetcar initiative have been the collaborative relationships developed with both public and private entities. The City has ensured that consideration of these important elements such as planning policies, economic development, housing, and other infrastructure improvements are incorporated into the design and implementation of the overall streetcar plan.

For example, the City of Charlotte has already leveraged significant private investment from the two current major projects adjacent to the Circulator Alignment. The Elizabeth Avenue project is leveraging \$14 of private investment for every \$1 dollar of public infrastructure and financing investment exclusive of the alignment costs. The combined capital construction and finance investments of the City and the County are leveraging \$21 of private investment for every \$1 of public investment.



Elizabeth Avenue from Presbyterian Hospital

Elizabeth Avenue was originally a Business Corridor Improvement project that became a joint venture between the City, Central Piedmont Community College (CPCC), and Grubb Properties, a private development company. The original intent of the project was to define and implement a streetscape plan for Elizabeth Avenue from Kings Drive to Hawthorne Lane through the business corridor program. The City realized the opportunity to collaborate with the other city departments, CPCC and Grubb Properties to greatly improve the pedestrian safety along Elizabeth Avenue and install the first rails for the proposed streetcar project. The total project cost was \$14,500,000. The construction costs were \$9,600,000. Of that construction cost, 7.5 percent was

contributed by both CPCC and Grubb Properties, 16 percent was contributed by the Charlotte Mecklenburg Utilities Department, 49 percent was contributed by Charlotte Area Transit System, and 20 percent was contributed by the Charlotte Mecklenburg Planning Department. This effort resulted in a pedestrian friendly environment that is “set up” for the first operational leg of the Charlotte Streetcar.

Demonstration of the Ability to Carry Out the Project Successfully

Previous Transit Projects

The City of Charlotte and Charlotte Area Transit System have a history of implementing collaborative transit and infrastructure projects successfully. The Charlotte Vintage Trolley Project was the first of such projects. In 1998 the City started on a 2 mile transit/pedestrian corridor project as a precursor for LRT connecting south Charlotte to Center City Charlotte. The \$40 million project, which included a floating slab through the Charlotte Convention Center, was successfully completed in August 2004. Private investment along the 2 mile corridor was the other success story. Property tax value increased from \$20 million to \$400 million and tax revenue increased from \$240 thousand to \$4.7 million annually.

The largest transit project the City has administered was the South Corridor LYNX Blue Line Light Rail Project. The 9.6 mile, 15 station light rail line runs through Uptown and South End, before paralleling South Boulevard to its southern terminus just north of Interstate 485. The LYNX Blue Line Project went through the New Starts Process and was awarded a Full Funding Grant Agreement by the Federal Transit Administration (FTA) in May 2005. The LYNX Blue Line was successfully completed in November 2007. The final cost of the project was \$462.7 million. The projected ridership for the completed Blue Line according to the Regional Model was 9,100 on an average weekday in its first year of operation, gradually increasing to 18,100 by 2025. In its first year of operation, the Blue Line saw an actual average daily weekday ridership of over 16,000 passengers, far exceeding expectations.

In conjunction with the LYNX Blue Line Project, the City developed the South Corridor Infrastructure Program (SCIP), which identified infrastructure projects that were needed adjacent to the light rail project. The SCIP program provided new and modified infrastructure with the goal of improving multi modal access to stations while supporting economic development and neighborhood enhancements in the corridor region. The program identified \$50 million in projects, which were paid for with two city bond referendums approved by the voters. Work completed as part of this project included: 16 miles of sidewalk, 7 miles of bike lanes, 315 wheelchair ramps, 112 improved pedestrian crossings, 13 intersection improvements and a mile of new/improved roadway.

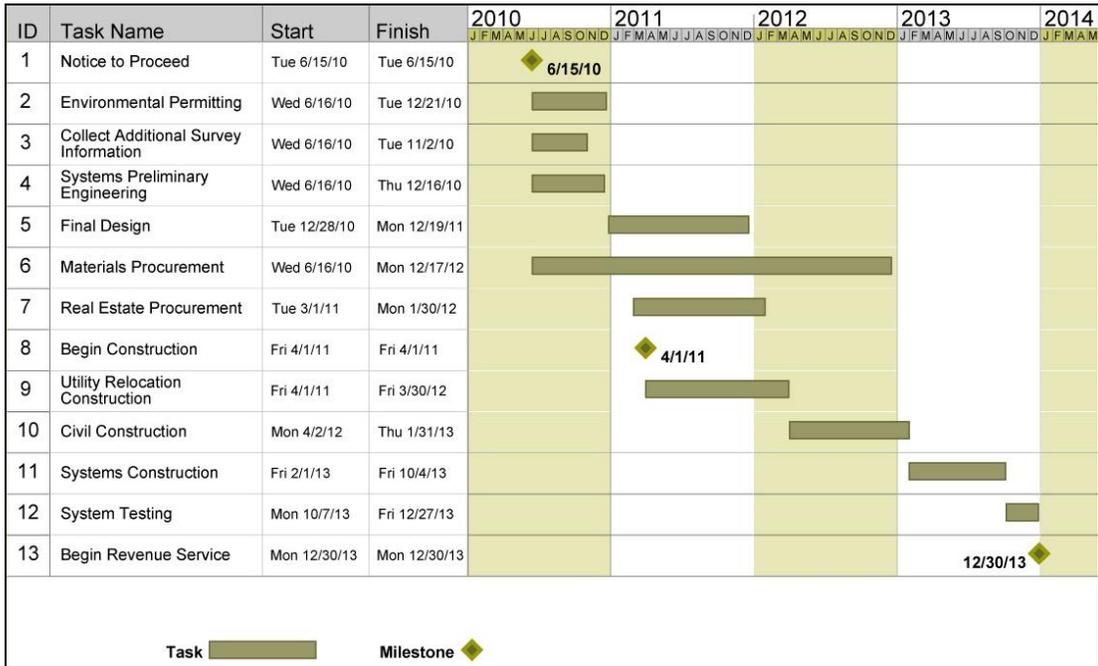


Charlotte Vintage Trolley Project

The City of Charlotte and CATS continues this model of success with the Blue Line Extension (BLE) Project and the Northeast Corridor Infrastructure (NECI) Program. The BLE is currently in the New Starts process and is approaching 30 percent design and is funded by the county wide ½ cent transit sales tax. The NECI is in the planning phase and currently has \$10 million allocated to the project with another \$6 million included in this year’s bond package.

Schedule

The anticipated schedule provides 6 months for preliminary engineering followed by 12 months for final design and 2 years for construction. The schedule also provides for early procurements of key construction materials, such as the girder rail as well as 3 months for system testing prior to revenue operations.



Environmental Approvals

A draft environmental assessment was completed for the earlier planning and conceptual design phase of the project. A preliminary review was completed by FTA Region IV. The environmental work already completed can be quickly updated and resubmitted for this shorter segment of the streetcar project. The new environmental document can be completed and approved in 3 to 4 months.

Legislative Approvals

As discussed in the Livability section of this grant proposal, the land use policies complimentary to the streetcar project, which were also developed to support to Charlotte’s growth strategy, are already in place with respect to the project.

For example, the proposed 10-mile streetcar alignment traverses through several adopted area and corridor plans with adopted land use recommendations. The *West End Land Use and Pedscape Plan* affects the northwestern section of the line along Beatties Ford Road and West Trade Street from Interstate 85 to Interstate 77/Center

City. The plan divides the corridor into five “Districts”, reflecting the unique architectural and land use characteristics of each. It also establishes the vision for future development. The five districts are 1) Urban, Cultural and Arts District; 2) University District; 3) Historic District; 4) Residential District and; 5) Civic and Commercial District. Except for the single family Residential District the proposed land use for the remainder of the corridor is primarily mixed use (residential, retail, office).

The streetcar route through Center City, which includes the initial 1.5 mile segment seeking funding through this grant is affected by two plans-the *Third Ward Neighborhood Plan* and the *Center City 2010 Plan*. Third Ward is one of three established residential neighborhoods within the Center City. The Plan recommends retaining historic residential character in appropriate locations while encouraging urban redevelopment of an appropriate scale in the single family area of Third Ward. The 2010 Plan recommends high density mixed uses along the proposed streetcar route, creating improved visual and physical connections between neighborhoods along the edges of Center City.

The eastern section of the proposed streetcar line outside of Center City is covered by the *Sunnyside Land Use and Pedscape Plan*, the *Plaza-Central Land Use and Pedscape Plan*, the *Central District Plan* and the *Eastland Area Plan*. All of these plans include the Central Avenue corridor, one of the oldest urban streets in the city. The Sunnyside plan recommends medium density multi-family residential development within the neighborhood and mixed use development along the corridor. The Plaza-Central Plan also recommends a more intense mixed use development pattern along the corridor with density tapering down toward the single family neighborhoods.

The *Eastland Area Plan* is the easternmost section of the streetcar line, anchored by an existing mall. The plan recommends a mixed use village development concept to replace the existing mall including public open spaces and streetcar accessibility within the development. The section between the *Plaza-Central Plan* and *Eastland Area Plan* is covered by the *Central District Plan*. The *Central District Plan* is an older land use plan that is updated when new rezonings and neighborhood plans are adopted. It generally recognizes the existing land use pattern along the corridor which is commercial and multi-family. There is a small section of single family development that remains.

Zoning to Support Urban Redevelopment

Significant sections of the proposed streetcar corridor are within a special urban zoning district called *Pedestrian Overlay Districts (PED)*. The purpose of the *PED* is to re-establish the urban development form by promoting a mixture of uses in a pedestrian-oriented setting of moderate intensity. The proposed streetcar corridor passes through three adopted overlay districts. The ‘Overlay’ allows urban redevelopment by-right, thereby saving time and money by avoiding the rezoning process.

Other urban zoning districts that have been used along the proposed streetcar route are the *Mixed Use Development District (MUDD)*, the *Urban Residential (UR)* zoning district and the *Uptown Mixed Use District (UMUD)*. All of these districts seek to allow medium to high density redevelopment by relaxing pre-existing suburban zoning requirements. Typical urban standards include reduced or zero minimum parking standards, reduced buffer dimensions, reduced building setbacks and flexible building design standards.

State and Local Planning

The *2030 Transit System Corridor Plan* has been fully incorporated into the *Regional Long Range Transportation Plan* as well as both the regional and State Transportation Improvement Programs. The Metropolitan Transportation Commission (MTC), the region's transit decision-making body, has officially recognized the Blue Line LRT Extension, the North Line Commuter Rail line and the streetcar project as its top priorities for fixed guideway expansion of the Charlotte transit system. All corridors, including the streetcar corridor are authorized in SAFETEA-LU

Technical Feasibility

The initial planning and conceptual design phase of the project was completed in 2006. Elements included the alternatives assessment and alignment definition, a draft environmental assessment and 10 percent conceptual design plans. In October of 2009, the City began the next phase of the project and initiated 30 percent design development for the entire 10-mile streetcar alignment.

Financial Feasibility

The budget for the Streetcar Starter Project is summarized below. A detailed cost estimate can be accessed through the Supporting Information Link found on Page 25.

Description	Cost
Civil Construction and Trackwork	\$14,649,606
Utilities	\$2,111,260
Streetcar Stops	\$910,000
Traction Power System	\$7,368,420
Communications and Central Control	\$385,920
Right of Way	\$1,354,549
Art In Transit	\$523,816
Subtotal (Construction Cost with 17.6% Contingency)	\$27,303,571
Soft Costs	\$4,782,665
Unallocated Contingency (8.76%)	\$2,809,990
Escalation (6% total for 2 years)	\$2,093,774
Total Cost	\$36,990,000

In the event an Urban Circulator Systems Grant of \$24.99 million is awarded to the City of Charlotte, City Council is prepared to provide the necessary matching funds. On January 25, 2010, Charlotte City Council approved the Urban Circulator Grant application and endorsed a funding plan setting aside \$12.0 million in previously appropriated capital investment funds as the City's share of the \$36.99 million Streetcar Starter Project. The \$12.0 million City contribution would be comprised of existing capital appropriations from various sources, including City debt capacity of \$5.5 million

and \$6.5 million funded from the City's Pay-As-You-Go capital fund. The Pay-As-You-Go fund is supported by a portion of the City's property tax, sales tax, and auto tax revenues.

The City's Comprehensive Annual Financial Report for the year ending June 30, 2009 can be viewed using the link below.

FY2009 Highlights:

- For FY 2009, the City maintained its AAA bond rating from all three major rating agencies.
- The assets of the City exceeded its liabilities by \$8,228,454
- The City governmental funds reported combined fund balances of \$611,072

The City of Charlotte has received a Certificate of Achievement for Excellence in Financial Reporting for its Comprehensive Annual Financial Reports presented by the Government Finance Officers Association of the United States and Canada for the past 24 years.

Summary of Additional and Referenced Material

Please follow this link to access all of the supporting information below:

<http://charmeck.org/Departments/CATS/Rapid+Transit+Planning/Center+City/Charlotte+Streetcar+Starter+Project>

Project Specific

- Letters of Support
- Conceptual Design Plan Sheets
- Center City Streetcar Draft EA
- Alignment Definition Report
- Center City Streetcar PMP
- Streetcar Starter Project Detailed Estimate
- Charlotte Streetcar Economic Development Study (BAE)
- Streetcar Technology Showcase
- Streetcar Starter Project Alignment Map
- Complete Charlotte Streetcar Project Map
- Charlotte Streetcar Project web page (CATS site)

Referenced Material

- 2030 Transit System Corridor Plan
- Centers, Corridors and Wedges Growth Framework
- 2009 Comprehensive Annual Financial Report (CAFR)
- Charlotte Center City 2010 Vision Plan
- Center City Transportation Plan
- Uptown Streetscape Standards
- Transportation Action Plan
- Urban Street Design Guidelines
- General Development Policies